Previous PDTD

App. F. IX-4

1927.

File No./30-27

Previous References (LB)

Serial Nos. 1-2

Later References
L R 187 - 28 - (4,5,8+9)

General and Revenue Secretariat.

Serial Nos.

Part B for Jan 28

SUBJECT

Estimate for Rs 8,200/- for the reconstruction of Collapsed Balulsappa bridge on the Koppa. Kuthahalli road

2 To The Chief Engineer, President, Dist Bd Shimoga & the Comptroller No. L 3862-4/L 4.1.28

Sanctions the estimate referred to above. the grant Rs being met from the Irrigation Cess Fund

G. R. S. 11) 1917

GENERAL AND REVENUE SECRETARIAT.

( )

NOTES.

File No. L.B. 130-27

FILE HEADING.

Reconstruction of the collapsed Balakoppa bridge

From

The Chief Engineer

No. 4931 Dated 26 11 17 Received 28 11 17

Diary No. 2528 Seven Enclos. Spare Copies. Serial No. 1

BRIEF ABSTRACT OF LETTER.

Forwards an estimate for Rs 8,500 for the above work to reconstruct the bridge using girders

NOTES AND ORDERS.

The Chief Engineer states the President Dr Bd Shimoga has countersigned the estimate and that it is reported by the Superintending Engineer that a provision of Rs 4100 has been made in

General and Revenue Secretariat.

L-B File No. 130 of 1927

in the current years budget of the Dist Bd for the purpose ..... It is also stated ~~by the~~ by the President in his letter addressed to the Superintending Engineer that the cost may be met by the Dist Bd & Govt is out of irrigation cess Funds. Marginal proposition sanctioned

KH 7/12/27 Submitted for perusal & Rev Br. orders perhaps may be consulted

K.7/12

The Dist Bd has been given Rs 1500 of this year out of irrigation cess funds for road works. Is this work one of those for which the grant was intended? Rev Branch to kindly note & return the file early

MD 9/12

This is one of the works ~~for which the grant of Rs 8140~~ included in the list of items for which the appropriation of an aggregate sum of Rs 8140 out of the balance of the I.C. Funds at the credit of the Dist Bd was sanctioned in G.O. No R 3218-24 dt 17-11-27 but it is an entirely new work

connected HR 176-27 The file has been

WD 0324—GPB—50,000—24-5-27

Rej 15/12 P.S.

KH

17/12

2528/L

App. F. III—2]

General and Revenue Secretariat. | L.B. File No. 130 of 1927

Serial No.

2D 26/12

L&L Please draft sanction

MW 26/12

Draft sanctioning is submitted for approval

KD 21/12/27

The Dt. Bd. Shimoga proposes repairing about 1 mile collapsed portion of the flood bund on the Koppa-Kithahalli Road at a cost of Rs. 1,000 (one thousand) for the purpose of raising half the cost which has been made from the Famine Fund in the Revised Estimate. The Dt. Bd. proposes has a provision for the other half of the cost. Draft sanction the works may be taken up and may be carried out.

MW 27/12

First Member

5.1.28 23/12

Case submitted re Settihalli Road Hassan one of the Hassan Settlement subjects

DE 24/12

DE 24/12

Issue MW 24/12

GO no. L 8862-4-/L B 130-27-2 dated 4/1/28 Sanctioning the estimate

NOTE—Contn. sheet

BRL 5/1/28

D 3251/27-7 DNO 2528/27 28/11/27

VD 1036—GPB—3000—16-12-25

No. L 931

Encl. 1 Report
1 Calculation Sheet
2 Tracings
1 Estimate
1 Plan
1 Copy
7

MYSORE PUBLIC WORKS DEPARTMENT
CENTRAL OFFICE,

Dated Bangalore, 26/11/ 1927

FROM

JOHN BHORE, ESQ., A.M.I.C.E., Etc.,
Chief Engineer of Mysore,
Bangalore

To

R. Ranga Rao, Esq., B.A., B.L.,
Secretary to Government,
General Department,
BANGALORE.

Sir,

Subject - Reconstruction of the Collapsed Ba
bridge on the Koppa - Tirthahalli

I have the honor to forward herewith, for sanction, an
amounting to Rs. 8,200/- for the above work.

2. The bridge as originally constructed consisted of
span arch of 20 feet diameter. During the heavy floods of
bridge collapsed. It is now proposed to reconstruct the b
girders.

3. The President of the District Board has countersi
estimate in token of his approval to the proposal.

4. A copy of letter No. C.510/L.B. 26-27 dated the 2
1927, from the President, District Board, Shimoga, suggesti
ces for meeting the cost of the work is herein enclosed for

It is also reported by the Superintending Engineer the
Rs. 4,100/- has been provided in the District Fund Budget Est
the Shimoga District, for the year 1927-28.

I have the honour t
Sir,
Your most obedient s

John Bhore

N.J.P.

CHIEF ENGINEER OF M

Report to accompany the estimate for constructing a girder bridge near Balekoppa at 3/10 of Koppa Tirthahalli road.

Reference:- Superintending Engineer's No. 2572 dated 29-12-26.

Amount of estimate. Rs. 8240/-

:o:-

SUPERINTENDING ENGINEER. Regd. No..... Date..... SHIMOGA CIRCLE.

The proposal is to construct a girder bridge in place of the washed out arch bridge of a single span of 20 feet. The arch was washed away during the heavy rains of 1923 and the reasons for the same are the insufficiency of waterway and unsound condition of the masonry and want of proper foundation.

The catchment area of the halla at the bridge is 1.5 Sq. miles. Calculating the maximum flood discharge at the bridge site as per Dickens formula the discharge is C.M.$^{3/4}$ =850x1.5 (assuming a coefficient of 850 for C) = 850 x $\sqrt[4]{3.375}$ = 850 x 1.355 = 1152 cusecs. But from the tank mannual, the discharge is given by $\frac{1.5.5280 \times 5280 \times 2.83}{12 \times 60 \times 60} = \frac{1.5 \times 88 \times 88 \times 2.83}{12}$ = 11 x 88 x 2.83 = 2739 Cusecs. This result is more than double the above one and seems be too high. The waterway proposed as per accompanying drawing is given by 2 x 12 x 13 = 312 Sft and assuming a velocity of 8 feet per sec, the discharge will be 2496 cusecs which is very nearly equal to the second result got in theabove calculations and so may be considered to be sufficiently safe.

Dickens formula. Usually Catchment area = $C \sqrt[3]{m^2}$ 675 x 1.31037 = 884.25 cfs

Dickens' $Q = C \sqrt[4]{m^3}$ 675 x 1.35 = 911.25 cfs

The soil at the site is sandy upto a depth of 3 feet and soft earth below A depth of 8 feet is provided for the foundations of the proposed structure which is considered to be sufficient as the thick bed of concrete provided distributes the superincumbent weights evenly. The foundation filling above concrete bed and superstructure will be of burnt size stone in mortar pointed with surki mortar. Lumpsum provisions for baling water (since the stream is perineal) medical charges, constructio of temporary sheds etc., are also made in the estimate. Railing of iron pipe has been provided in the estimate.

Calculation for using 5" X 10" rolled steel beams eighing 30 lbs per foot for 12 feet span proposed for the alekoppa bridge at 3/10 of the Koppa Kirthahalli road.

The R.S. Beams are taken as placed 5' apart C to C. Th ead load due to the road metal, the weight of the rolled teel beam and the trough plates may be taken as $1\frac{1}{2}$ tons per quare foot The total dead load on each of the middle two eams will be $1\frac{1}{2} \times 5 \times 12 = 90$ Cwts or $4\frac{1}{2}$ tons.

The heaviest live load that is expected to pass over he bridge is a 3 ton bus, Assuming that the wheel base of he bus is 9 feet and the rear axle load is 2 tons, the bean ill be subjected to the maximum strain when one of the rear heel comes to the centre of the span and directly over the eam. The live load on the rear wheel is 1 ton which may be aken as equivalent to a dead load of 2 tons.

Therefore the R.S. Beams must be strong enough to bear distributed load of $4\frac{1}{2}$ tons and a concentrated load of 2 ons at the centre of the span. With these loads, the --- aximum bending movement which occurs at the centre of the pan is given by

$\frac{W_1 l}{8}$ plus $\frac{W_2}{4}$ Where $W_1 = 4\frac{1}{2}$ tons (distributed)
$W_2 = 2$ tons (concentrated)
l = span 12' or 144"

$= 9/2 \times \frac{12 \times 12}{8}$ plus $\frac{2 \times 12 \times 12}{4} = 81$ plus $72 = \underline{153}$ inc to

The safe resisting moment of the R.S. beam 5" x 10" ection weighing 30 lbs per foot is given by

$M = f\frac{I}{y}$ Where M - the resisting moment.
f - safe limiting stress which may taken as 6 tons per sq. inch

I - moment of inertia of the sectio of the beam.

Y = the depth from the neutral axis to the edge of the beam

$M = f\frac{I}{y} = \frac{6 \times 146.4}{5}$ (Taken from Manyals) = 175 inch tons

which is in excess of the bending moment, the beam is subjected to and se the section of the beam is quite sufficient for the purpose

Proceedings of the Government of H.H. the Maharaja of Mysore.

Read:-

Letter No.4931 dated, the 26th November 1927, from the Chief Engineer. forwarding for sanction, an estimate for Rs. 8,200/- duly countersigned by the President, District Board, Shimoga, for reconstructing the collapsed Balahonda bridge on the Koppa - Tirthahalli Road with girders. ~~stating that as proposed together with a copy of letter received from~~ by the President Dist. Board, Shimoga, ~~stating that~~ the cost of the above work may be met ~~in~~ equall ~~proportion~~ from the grant made to the Distt. Board out of the Irrigation cess fund & by the District Board.

ORDER NO.L.

Dated. Bangalore. the December 1927

Sanctioned. The cost will be met as proposed from the grant from the Irrigation Cess Fund sanctioned to the Board in G.O. No.R.3719-2 L.R.176-27-5 dated, the 17th November 1927 and the provision of Rs. 4,100/- made for the works in the current year's budget of the Board.

For Gl. Secry to Govt.

To

The Chief Engineer of Mysore, with Plan & Estimate.
" Pdt. Dt. Bd. Shimoga.
" Comptroller to Govt.

K.M.R.1.
22/12.